



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 8
999 18TH STREET - SUITE 500
DENVER, CO 80202-2466

EPR:ER

POLLUTION REPORT

VASQUEZ BLVD. & I-70 (**Removal #2**)
City and County of Denver, Colorado

I. HEADING

Date: **11/10/00**
Site Name: Vasquez Blvd. & I-70 (**Removal #2**)
(aka North Denver Residential)
From: Pete Stevenson, OSC
To: Patty Smith, EPA Headquarters
POLREP No.: **POLREP #3**

II. BACKGROUND

Site No.:	9R
Response Authority:	CERCLA
Action Memorandum:	September 16, 1998
Amendment - RV#2:	04/18/00
Start Date - RV#1:	October 13, 1998
Completion Date - RV#1:	October 1, 1999
Start Date - RV#2:	September 27, 2000
Completion Date - RV#2:	TBD

III. SITE INFORMATION

A. Incident Category

Time-Critical, Fund-Lead, Removal Action

B. Site Description

1. Site Location

The Site is located in the northwest part of Denver and generally is bounded by the South Platte River on the West, Colorado Boulevard on the East, 35th Avenue on the South, and 52nd Avenue on the North.

2. Site Characteristics

The Site area was settled in 1851, four years after the first pioneers entered the valley. Approximately 5700 people currently live in Elyria and Swansea, the predominant neighborhoods in the Site area. Youth under 18 comprise 36% of the residents (twice the average of the City of Denver).

Soon after development of the area, it was presumably contaminated by wastes containing lead and arsenic from smelting operations in the area. At least three smelters operated in the area in the late 1800s. These smelters reportedly deposited wastes within or adjacent to the Site.



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3. Description of Threat

Arsenic and, to a lesser degree, lead have been identified at the Site as the contaminants of concern. Arsenic and lead are hazardous substances, as defined by Section 101 (14) of CERCLA. These hazardous substances may have been released into the residential soils by historic smelting activities and spread through the Community by aerial deposition. At least 21 properties contain arsenic and lead at levels of concern to the Removal Program.

Because arsenic contamination is found in unsodded areas that are used for recreation, there is also a potential for contaminated soil to be wind-blown and dust-sized particles to be transported by wind and human activities into additional yards and into homes. There are an estimated 6000 cubic yards of soil contaminated above the selected Removal Program health protective action level of 2000 ppm lead and/or 450 ppm arsenic.

IV. RESPONSE INFORMATION

A. Situation

1. Action description

The following represents factors considered in determining whether properties within the community would be included within EPA's time critical removal action. These criteria were developed with input from EPA toxicologists, technical staff, and CDPHE/Denver personnel. They were based on the need to provide immediate reduction in exposure to arsenic/lead contaminated soil. These factors were generally considered on a zone-by-zone basis to establish whether an individual zone should be addressed to safeguard the overall residential yard for a young child. Both current and potential future exposures were considered in applying the criteria.

Initially, 21 properties were identified as candidates for this Removal Action and eighteen were selected for remediation. In August of 1999, EPA implemented a Phase III Field Investigation within the study area of the Site. Phase III, part of the ongoing Site remedial investigation, included sampling of surface soil, garden vegetables, and garden soils in residential yards and dust within the homes. It also included surface sampling of schools and parks. A total of 1550 residential properties, four schools and one park were sampled during the period August through November, 1999. The targeted properties were all those that had never been sampled in previous removal site assessments conducted in 1998 (the Phase I and Phase II sampling programs). The results of the Phase III investigation indicated that 33 residential properties were in need of removal action. The additional properties are similar to those in the Original Action Memorandum and removal procedures will be similar; however, in order to accomplish the new removal activities the Action Memo was amended to include a Second Removal. All owners were contacted, but three refused access for EPA to conduct the Removal Actions. Therefore, 30 residential properties will be cleaned up in the the Second Removal.

In the Original Action Memorandum a statement was included that "additional properties will be addressed as follow-up sampling

results indicate that levels exceed the action levels and other criteria for this Removal Action". The factors listed below were considered determining whether additional properties within the community should be included within the Removal Action. These criteria were developed with input from EPA toxicologists, technical staff, ATSDR, and CDPHE/Denver personnel. They were based on the need to provide immediate reduction in exposure to arsenic/lead contaminated soil:

"Zones on properties will generally be included in the Removal Action if the average surface soil concentration (top 2") exceeds 2000 mg/kg of lead or 400 mg/kg of arsenic."

The previous removal action utilized an action level of 450mg/kg. For the additional Removal Action, the more conservative level of 400 mg/kg will be used. The Removal Action at the 30 additional homes will again include the following specific activities:

- a. Contaminated soils will be removed to a one foot depth.
- b. Individual properties where soil is removed will be backfilled with clean soil and top soil to the original grade and landscaped with sod.
- c. Structures and fencing on the properties will be left in place or returned to their original locations if removal is necessary. If fencing cannot be reused, it will be replaced.
- d. Existing Shrubs and/or Bushes (defined as low, densely branched plants that impede soil removal): Removal and replacement with the same species, standard nursery stock, and number of plants.
- e. Existing Perennial Plants: Removal and replacement with the same (to the extent possible) or similar species, approximate size, and number of plants.
- f. Annual Plants: Removal with no replacement.
- g. Existing Sprinkler Systems: If the existing system impedes soil removal or will not function after barrier soil is placed, removal and replacement with the same or similar system.
- h. Existing Concrete, Asphalt, Brick Stone, or Tile Surfacing (sidewalks, driveways, parking, lots, pads): Remain in place and excavate around unless the existing surfacing has been damaged in the past to the extent that soils exceeding the action levels are exposed. If soils exceeding the action levels have been exposed, remove and replace the surfacing with equivalent materials, if necessary to prevent exposure.
- i. Existing Landscape Covers and Borders: Removal and replacement with equivalent materials in areas requiring remediation. The original materials may also be used if materials are not damaged during removal.
- j. Outdoor Animals: Temporary relocation during remediation

of individual properties located in areas requiring remediation.

k. Movable Buildings and Sheds: Temporary relocation during remediation, if remediation is necessary under such structure.

l. Existing Vegetable Gardens Exceeding Action Levels: Removal of a maximum of 18 inches of soil; replacement with a minimum of, but not necessarily more than, 18 inches of suitable vegetable garden soil with characteristics acceptable to EPA. Suitable vegetable garden soil will consist of clayey or sandy loam soils having a specified minimum percentage of organic matter. Suitable grades and ground cover will be restored.

m. Prevention of Indoor Dust: Dust suppression measures will be utilized during Removal. If necessary, other measures, such as sealing of doors and windows with plastic, will be taken during remediation of individual properties. If necessary, portable air cooling devices will be offered to residents during this time period.

n. Existing Decks: Remain in place and excavate beneath and around as needed unless the existing deck impedes soil removal. Options: should existing deck impede soil removal, include removal of existing deck and replace with an equal deck or utilize "shot crete" under the deck.

Owners of the additional 30 residences will be asked for permission to remediate their property. Detailed plans will be developed for the properties which are undergoing remediation, and owners will be provided copies and an opportunity to discuss the plans. The removal schedule will be provided to the owner; and after the removal, replacement of sod, etc., each owner will review the action with the OSC and discuss any future activities.

2. Project Schedule

Soil removal activities for Removal Action #2 were started on 09/27/00, and as of 11/07/00 fifteen properties have had contaminated soils removed and clean soil backfilled to the original grade. The planned completion date is 12/15/00. Monitoring of landscape restoration will continue into the Spring of 2001.

B. Estimated Costs

Cost Estimate: A table containing additional cost estimates for the Removal Action Amendment is shown below:

	Present Ceiling	New Ceiling
<u>EXTRAMURAL COSTS:</u>		
<u>Regional Allowance Costs</u>		
ERRS	\$ 830,000	\$2,000,000
20% Extramural Costs Contingency	\$ 180,000	\$ 400,000
<u>Other Extramural Costs Not Funded</u>		

<u>From Regional Allowance:</u>		
<u>START</u>	\$ 70,000	\$ 156,000
TOTAL EXTRAMURAL COSTS	\$1,080,000	\$2,556,000
<u>INTRAMURAL COSTS:</u>		
Intramural Direct Costs	\$ 12,000	\$ 31,000
Intramural Indirect Costs	\$ 25,000	\$ 62,000
TOTAL INTRAMURAL COSTS	\$ 37,000	\$ 93,000
TOTAL REMOVAL PROJECT CEILING	\$1,117,000	\$2,649,000